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| EXAMINER | |
|---|---|
| CHOUDHURY, AZIZUL Q | |
| **ART UNIT** | **PAPER NUMBER** |
| 2145 | |

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 09/972,108 | KAUSHIK ET AL. | |
| | Examiner | Art Unit | |
| | Azizul Choudhury | 2145 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *28 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## *Detailed Action*

This office action is in response to the correspondence received on March 28, 2005.

## *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nordstrom et al (US Pat No: US006078970A) in view of Weber et al (US Pat No: US006480901B1), hereafter referred to as Nordstrom and Weber, respectively.

1. With regards to claim 1, Nordstrom teaches through Weber a method comprising: receiving a connectivity capability structure of a device; receiving a list of connection records for the device; and determining connectivity information for the device based on the connectivity capability structure and the list of connection records

   (Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the

art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Plus, within the "Management Interface Application Start-Up" portion of the disclosure (column 16, line 51 – column 18, line 22, Weber), Weber discloses how during startup, device connectivity is attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure).

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

2. With regards to claim 2, Nordstrom teaches through Weber the method wherein the device is a Peripheral Component Interconnect (PCI) device

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to

one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

3. With regards to claim 3, Nordstrom teaches through Weber the method wherein the connectivity capability structure is an indicator of a type of connection from a current PCI device

(Network monitoring designs are all able to determine retrieve information about the NIC (PCI device), such as model and make information. By obtaining information about the NIC, the connection type can be determined. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to

one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

4. With regards to claim 4, Nordstrom teaches through Weber the method wherein the connectivity capability structure further comprises an indicator for a number of connectivity ports on the PCI device

(Network monitoring designs are all able to retrieve information about the NIC (PCI device), such as model and make information. By obtaining information about the NIC, the number of ports can be determined. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to

one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

5. With regards to claim 5, Nordstrom teaches through Weber the method wherein the connectivity capability structure comprises: a capability identifier; a pointer to a next capability structure; an indicator of a type of connection from a current device; an indicator of a number of connectivity ports on a device; and an indicator of a location of a number of connection records on a device

(Network monitoring designs are all able to retrieve information about the NIC (PCI device), such as model and make information. By obtaining information about the NIC, its capability information is obtainable. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Hence means are present to contain the claimed data since graphs are able to hold pointer, connection, port and location information.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain

information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

6. With regards to claim 6, Nordstrom teaches through Weber an apparatus comprising: a device; and a processor coupled to the device for retrieving information on a connectivity capability structure of the device, and retrieving information on a list of connection records of the device; and determining connectivity information for the device based on the connectivity capability structure and the list of connection records

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Plus, within the "Management Interface Application Start-Up" portion of the disclosure (column 16, line 51 – column 18, line 22, Weber), Weber discloses how during startup, device connectivity is attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure).

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

7. With regards to claim 7, Nordstrom teaches through Weber the apparatus further comprising an operating system executing on the processor

(Nordstrom teaches a network monitoring design for determining the adapter statuses. It is inherent that operating systems exist within the computers of the design. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

8. With regards to claim 8, Nordstrom teaches through Weber the apparatus wherein the device is a PCI device

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

9. With regards to claim 9, Nordstrom teaches through Weber a machine-readable medium having stored thereon instructions, which when executed by a processor, causes said processor to perform the following: receive a connectivity capability structure of a device; receive a list of connection records for the device; and determine connectivity information for the device based on the connectivity capability structure and the list of connection records

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Plus, within the "Management Interface Application Start-Up" portion of the disclosure (column 16, line 51 – column 18, line 22, Weber), Weber discloses how during startup, device connectivity is

attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure).

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

10. With regards to claim 10, Nordstrom teaches through Weber the machine-readable medium wherein receiving the connectivity capability structure of the device is receiving the connectivity capability structure of a PCI device

(Network monitoring designs are all able to determine retrieve information about the NIC (PCI device), such as model and make information. By obtaining information about the NIC, the connection capability can be determined. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data

objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

11. With regards to claim 11, Nordstrom teaches through Weber the machine-readable medium wherein receiving the connectivity capability structure of the PCI device comprises receiving an indicator of a type of connection from a current PCI device.

(Network monitoring designs are all able to determine retrieve information about the NIC (PCI device), such as model and make information. By obtaining information about the NIC, the connection type can be determined. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

12. With regards to claim 12, Nordstrom teaches through Weber a system comprising: a plurality of processors; a plurality of devices coupled to the plurality of processors; a first memory coupled to the processor and containing a connectivity capability structure for the plurality of devices coupled to the plurality of processors; and a second memory coupled to the processor and containing a list of connection records for the plurality of devices coupled to the plurality of processors; wherein connectivity information for the plurality of devices is

determined based on the connectivity capability structure and the list of connection records

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. In addition, it is inherent that memory exists as claimed. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Plus, within the "Management Interface Application Start-Up" portion of the disclosure (column 16, line 51 – column 18, line 22, Weber), Weber discloses how during startup, device connectivity is attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure).

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

13. With regards to claim 13, Nordstrom teaches through Weber the system wherein the plurality of devices is a plurality of PCI devices

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. Memory is inherently needed to store all this data and is inherently present. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

14. With regards to claim 14, Nordstrom teaches through Weber the system wherein the first memory and the second memory are a single memory storage device

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Memory is inherently present in such a system. And it is also inherent that a single memory device such as a harddrive is able to store two separate items. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

15. With regards to claim 15, Nordstrom teaches through Weber an apparatus comprising: a processor; and a memory coupled to the processor, the memory comprising: data on a capability identification of a first device coupled to the processor; data on a pointer to a next capability structure of a second device coupled to the processor; data on a connectivity type for the first device; data on a number of connectivity ports for the first device; and data on the location of a number of connection records for the first device

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Hence means are present to contain the claimed data since graphs are able to hold pointer, connection, port and location information.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the

teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

16. With regards to claim 16, Nordstrom teaches through Weber the apparatus wherein the first device and the second device are PCI devices

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with

graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

17. With regards to claim 17, Nordstrom teaches through Weber the apparatus wherein the apparatus further comprises a plurality of devices coupled to the processor

(Nordstrom teaches a network monitoring design for determining the adapter statuses. It is inherent that the design comprises devices coupled to processors as claimed. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs

are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

18. With regards to claim 18, Nordstrom teaches through Weber an apparatus comprising: means for receiving a connectivity capability structure of a device; means for receiving a list of connection records for the device; and means for determining connectivity information for the device based on the connectivity capability structure and the list of connection records

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those

elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Plus, within the "Management Interface Application Start-Up" portion of the disclosure (column 16, line 51 – column 18, line 22, Weber), Weber discloses how during startup, device connectivity is attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure).

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

19. With regards to claim 19, Nordstrom teaches through Weber the apparatus wherein means for receiving is a means for receiving from a memory device

(Nordstrom teaches a network monitoring design for determining the adapter statuses. It is inherent that memory exists within the design as claimed. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

20. With regards to claim 20, Nordstrom teaches through Weber the apparatus wherein means for determining connectivity information for the device further comprises means for extracting information from the connectivity capability structure and the list of connection records to determine the connectivity information for the device

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about

nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. When information is retrieved, it must be extracted as claimed. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

21. With regards to claim 21, Nordstrom teaches through Weber a method comprising: inputting a connectivity capability structure data of a device; inputting a list of connection records data of the device; and determining a connectivity of the device based on the connectivity capability structure and the list of connection records; and repeatedly performing the inputting a connectivity capability structure, the inputting a list of connection records data, and the determining a connectivity for a plurality of devices

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status and capability information. It is inherent that all information retrieved must also have been inputted. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes. Plus, within the "Management Interface Application Start-Up" portion of the disclosure (column 16, line 51 – column 18,

line 22, Weber), Weber discloses how during startup, device connectivity is attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure).

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

22. With regards to claim 22, Nordstrom teaches through Weber the method wherein the devices are PCI devices

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is well known in the art that network information retrieved through the PCI devices comprises status

and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber, to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

23. With regards to claim 23, Nordstrom teaches through Weber the method wherein the method is performed dynamically

(Nordstrom teaches a network monitoring design for determining the adapter statuses. Network monitoring designs typically obtain information about nodes by contacting the node's NIC, which typically is a PCI device. It is well

known in the art that the monitoring tasks can be set up to be dynamic. Nordstrom's disclosure teaches how designs are present for obtaining network information from the PCI devices (column 2, lines 1-15, Nordstrom). It is also well known in the art that network information retrieved through the PCI devices comprises status and capability information. However, Nordstrom's design does not detail a list of connection records.

Weber teaches also teaches a network monitoring design. The design allows for object graphs (column 23, lines 10-34, Weber). Graphs are data objects that contain information concerning elements and locations of those elements. In the case of network monitoring designs, graphs hold data about nodes and the locations of those nodes.

Both Nordstrom and Weber disclose designs for network monitoring designs. While Nordstrom's disclosure teaches how PCI is used to obtain information about nodes through their network cards (PCI device), it does not teach a list of connection records. Weber however does teach a design with graphs. Graphs are data structures that contain network information about nodes as well as location information. Therefore, it would have been obvious, to one skilled in the art, during the time of the invention, to have combined the teachings of Nordstrom with those of Weber; to provide methods and apparatus for managing I/O devices on a network (column 25, lines 61-63, Weber)).

***Response to Remarks***

The amendment filed March 28, 2005 has been carefully evaluated but is not deemed fully persuasive. The primary concern addressed by the applicant's representative is the amended trait the connectivity information being based on connectivity capability structure and the list of connection records. The examiner reevaluated the prior arts and has concluded that those claimed traits are in fact present within at least the Weber prior art. Within the "Management Interface Application Start-Up" portion of the Weber disclosure (column 16, line 51 – column 18, line 22, Weber), Weber teaches how during startup, device connectivity is attained (column 16, lines 54-56, Weber). To attain the connectivity information, the object graph (connection records) is retrieved as well as a device-to-port map (equivalent to connectivity capability structure.

***Conclusion***

**THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Azizul Choudhury whose telephone number is (571) 272-3909. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Martin-Wallace can be reached on (571) 272-6159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AC

V. Martin Wallace

VALENCIA MARTIN-WALLACE
SUPERVISORY PATENT EXAMINER